

EXHIBIT 48

**AdX Comms: Server Side Interface for 3rd party ad server dynamic allocation Not Supported
go/3pda**

internal only

What is it	Some publishers have requested integration to directly call AdX from their ad server, specifically without a client-side redirect. This feature was available through Admeld. This would require We have officially decided to <i>not support server side integration into AdX</i> due to lack of a strong business case.
Links	Unapproved PRD: go/adx3pastp
What does this affect	Publishers who wish to invoke AdX directly from their ad server, without a client side redirect. Specifically this applies to Admeld customers who had a server side integration via Admeld and have requested one via AdX. Also some pubs thought that we may be introducing this in the future.
Key Contacts	PM: Michael Smith Global Display Publisher sales: Pooja Kapoor PTM: Gregoire Cachet

Summary

AdX Two Bite Feature Summary

Protocol changes

Feature Details

1. PA/PD Bid Behaviour

2. Publisher blocking

3. Proto Changes

FAQ

Deal id changes

Publisher behaviour

Collateral

Beta Exit Criteria

Overview

An outstanding request from publishers has been to support server-side integration, such that a publisher's 1st or 3rd party ad server would directly invoke AdX. Currently, integration is possible in AdX and well-supported via client-side passbacks. The development of a server-side interface would reduce the discrepancy number for the client side solution, making it in line with AdX/DFP integration.

Note that this could open up additional inventory as well. Some inventory might not be tolerant

of the high level of discrepancy with a client-side integration.

Business Analysis

Benefit

This feature will lower discrepancy from client-side integration. This should result in about 30% lower discrepancy for customers over the client-side integration.

This will also facilitate a more “dynamic allocation”-like function for 3PAS. Note that this kind of integration is *still possible* with client-side integration, but using client-side integration for DA drives discrepancy up such that the feature is fairly unusable.

To determine the feasibility of this project, we requested that our sellside teams solicit business cases from publishers, analyzing the traffic that would be driven by this uplift. We received the following analysis from SEEMEA.

We welcome further analyses from other regions.

- NACE: rburke is currently pulling together a case on her end from Admeld customers, but may need support. Thomas Schreiber stated that there is not enough demand from what he sees.
 - I met with SwitchConcepts in the UK. They claim that this would drive \$1M+/month. They will give me an email breakdown of demand. They are a network pub, but seem to be above-average in cleanliness. They are eager to do all the implementation necessary on their end.
- North America does not appear to have demand, based on conversations from Pooja and Adam Klee. If this is not the case, we need a champion from NorthAm to help drive this business case.

Costs/Risks

The development for this feature is not easy, and this was proved by Admeld. From Brian Adams: “We did several server side integrations at Admeld (including with Criteo) and they were plagued with ongoing issues. ... At this point I'm more of the mindset of getting folks to flip to DFP to get them DA. The retrofit of DFP Small Business was targeted primarily at international customers and it just entered beta. This gives us a new angle here.”

Therefore, we should enter into this project only if it's truly economically viable. If we can have customers use DFP SB instead for DA, this may be a much better solution.

Implementation Costs for Google

[Google must do significant work in engineering and PM/Policy to make this work. Specifically:]

Comment [1]: How many quarters to develop? 1, 2, 3?

Comment [2]: Depends on resourcing. PM estimate of 2-4 eng-quarters, without ongoing support or policy chasing.

- Protobuf disclosure: the interface to invoke AdX must be made public instead of internal only.
- Integration support. This could be quite large if the pub/dev is not good enough.
- Spam buyoff per pub. And perhaps per network partner!!

Support Costs and Risks for Google

Account managers and the spam team will have a new type of spam to manage. Development will likely be roped in if there are issues in spam determination.

Requirements and Implementation Costs

The only acceptable interface is one where the ad server passes a minCPM to AdX, and if AdX can beat this minCPM, then the query must serve.

The developer must conform to Google's protobuf format and API.

Google requires showads.js on the page instead of just tag-level integration (for spam signal detection). It is likely that this can be included by the developer through dynamic inclusion by their toplevel javascript.

A retag on the server will be necessary, and may require retagging; it has to be a tag with significant javascript on the client side, gpt or showads.

Summary

We welcome further business cases and support from sales for building a business case. If a cumulative business case does present itself - such that both the breakeven and opportunity costs are exceeded - then, as always, we could schedule this work.

As of right now, the business case does not justify the development.